## REMARKS

In view of the following discussion, the Applicants submit that none of the claims now pending in the application are unpatentable under the provisions of 35 U.S.C. § 103. Thus, the Applicants believe that all of these claims are now in allowable form.

### I. IN THE CLAIMS

The Applicants herein amend claims 17-20 to better recite aspects of the invention already recited previously. Specifically, claims 17-20 are amended to recite independent system claims rather than system claims referring back to the method claims of 1, 5, 7 and 11.

### II. CLAIM OBJECTIONS

The Examiner objects to claims 13-16 because of various formalities. Specifically, the Examiner suggests that claims 13-16 should be written as independent form. In response the Applicants herein amend claims 13-16. As such, the Applicants respectfully request the objection be withdrawn.

### III. REJECTION OF CLAIMS 1-20 UNDER 35 U.S.C. § 103

The Examiner rejected claims 1-20 as being unpatentable over US Patent Publication 2003/0065655, published on April 3, 2003, hereinafter referred to as "Syeda-Mahmood" in view of US Patent 6,986,104, issued on January 10, 2006, hereinafter referred to as "Green." The Applicants respectfully traverse the rejection.

Syeda-Mahmood teaches a method and apparatus for detecting query-driven topical events using textual phrases on foils as indication of topic. Consequently, a student may watch a recorded lecture or event at a later time at a replay facility of a distance learning center. (See Syeda-Mahmood, para. [0040].) A user may provide a topical search engine with a foil query to search for desired topics in the video tape. (See *Id.* at para. [0041].)

Green teaches a method and apparatus for normalizing and converting structured content. Information may be transformed from one semantic environment to another, for example from a NorTran Workbench and a SOLx server. (See Green, Abstract.)

The Examiner's attention is directed to the fact that Syeda-Mahmood and Green, alone or in any permissible combination, fails to teach or to suggest a method for searching a document comprising receiving a query that designates at least (A) a phrase to be matched in a phrase matching process and (B) a selective designation of at least a tag or annotation that is to be ignored during the phrase matching process or a method of creating query-independent indices suitable for use in searching a document comprising labeling elements in the document with intervals wherein for markup tags, the intervals are defined in terms of a starting index number associated with an opening markup tag and an ending index number associated with a closing markup tag that corresponds to the opening markup tag and for single words, the intervals are defined in terms of a single index number associated with the word, as positively claimed by the Applicants' independent claims 1 and 11, respectively. Specifically, Applicants' independent claims 1 and 11 recite:

> 1. A method of searching a document having nested-structure document-specific markup, the method comprising:
> receiving a query that designates at least (A) a phrase to be matched in a phrase matching process, and (B) a selective designation of at least a tag or annotation that is to be ignored during the phrase matching process;
> deriving query-specific indices based on query-independent indices that were created specific to each document; and
> carrying out the phrase matching process using the query-specific indices on the document having the nested-structure document-specific markup. (Emphasis added.)
>
> 11. A method of creating query-independent indices suitable for use in searching a document having nested-structure document-specific markup, the method comprising:
> a) labeling elements in the document with intervals, wherein:
> a1) for markup tags, the intervals are defined in terms of a starting index number associated with an opening markup tag and an ending index

number associated with a closing markup tag that corresponds to the opening markup tag, and

a2) for single words, the intervals are defined in terms of a single index number associated with the word; and

b) forming the query-independent indices so that they are configured to be used in the searching method by first receiving, for a word or tag in the document, a position in the document, and by then indicating whether or not the word or tag is present at that position. (Emphasis added.)

Applicants' independent claims 13, 16, 17 and 20 recite similar limitations. In one embodiment, Applicants' invention is a method for searching a document comprising receiving a query that designates at least (A) a phrase to be matched in a phrase matching process and (B) a selective designation of at least a tag or annotation that is to be ignored during the phrase matching process or a method of creating query-independent indices suitable for use in searching a document comprising labeling elements in the document with intervals wherein for markup tags, the intervals are defined in terms of a starting index number associated with an opening markup tag and an ending index number associated with a closing markup tag that corresponds to the opening markup tag and for single words, the intervals are defined in terms of a single index number associated with the word. As a result, the Applicants' invention provides phrase matching in XML documents that permit dynamic (i.e., at query time) specification of ignored tags and annotations, handle multiple and nested matches, permit specification of arbitrary document fragments as the search context and support approximate matching. (See Applicants' specification, p. 5, para. [0026].)

First, the Applicants respectfully submit as previously argued, that neither Syeda-Mahmood nor Green teach or suggest searching any documents having the nested-structure document-specific markup, such as XML documents. Contrary to the Examiner's response in the Final Office Action, dated December 14, 2006, that this limitation carries no weight because it is only recited in the preamble, the Applicants respectfully submit that independent claims 1, 13 and 17 all recite the limitations of "carrying out the phrase matching process using the

query-specific indices on the document having the nested-structure document-specific markup" (See e.g., claim 1 *supra*.)

Regardless, Syeda-Mahmood fails to teach or suggest a method for searching a document comprising receiving a query that designates at least (A) a phrase to be matched in a phrase matching process and (B) a selective designation of at least a tag or annotation that is to be ignored during the phrase matching process. The Examiner concedes this in the Final Office Action. (See Final Office Action, p. 8, ll. 10-11.) However, the Examiner then alleges that Green bridges the substantial gap left by Syeda-Mahmood.

Green fails to bridge the substantial gap left by Syeda-Mahmood because Green also fails to teach or suggest a method for searching a document comprising receiving a query that designates at least (A) a phrase to be matched in a phrase matching process and (B) a selective designation of at least a tag or annotation that is to be ignored during the phrase matching process. The Examiner alleges that Green teaches the above limitation at column 14, lines 36-41 and column 37, lines 1-3. However, Green at column 14, lines 36-41 only teaches using joining rules to allow users to specify how separated elements should be joined. Moreover, Green at column 37, lines 1-3 only teaches that other parse trees that do not achieve the best score are ignored. Green does not teach or suggest at least the limitation of a selective designation of at least a tag or annotation that is to be ignored during the phrase matching process.

Even if the Examiner broadly interprets the Applicants' claim and Green to somehow analogize an entire parse tree to a tag or annotation, Green still does not teach or suggest ignoring a **selective** designation of at least a tag or annotation. For example, a user may select certain tags or annotations to ignore during a query. (See e.g., Applicants' specification, p. 11, para. [0061].) In stark contrast, Green teaches that a user has no control over selecting which parse trees are ignored. Rather, the parse trees that are ignored are a function of achieving a best score of a parser. (See Green, col. 36, l. 52 – col. 37, l. 3.)

In addition, Syeda-Mahmood fails to teach or suggest a method of creating query-independent indices suitable for use in searching a document

comprising labeling elements in the document with intervals wherein for markup tags, the intervals are defined in terms of a starting index number associated with an opening markup tag and an ending index number associated with a closing markup tag that corresponds to the opening markup tag and for single words, the intervals are defined in terms of a single index number associated with the word. As discussed above, Syeda-Mahmood does not teach or suggest the use of any documents having the nested-structure document-specific markup, such as XML documents. Consequently, Syeda-Mahmood does not teach or suggest the use of any markup tags or even labeling intervals for markup tags, wherein the intervals are defined in terms of a starting index number associated with an opening markup tag and an ending index number associated with a closing markup tag that corresponds to the opening markup tag.

Furthermore, Syeda-Mahmood fails to teach or suggest labeling intervals for single words, wherein the intervals are defined in terms of a single index number associated with the word. In contrast, Syeda-Mahmood teaches that indexing for single words are represented by tuples ($w$, $t_w$, $p_w$), where w is the word string, $t_w$ is the time when it occurred and $p_w$ is the confidence level of recognition. (See Syeda-Mahmood, para. [0048].) Notably, the tuple is not a single index number associated with the word.

Green fails to bridge the substantial gap left by Syeda-Mahmood because Green also fails to teach a method of creating query-independent indices suitable for use in searching a document comprising labeling elements in the document with intervals wherein for markup tags, the intervals are defined in terms of a starting index number associated with an opening markup tag and an ending index number associated with a closing markup tag that corresponds to the opening markup tag and for single words, the intervals are defined in terms of a single index number associated with the word. As discussed above, Green only teaches a method and apparatus for normalizing and converting structured content. (See Green, Abstract.) In addition, the Applicants note that the Examiner does not cite Green in attempting to reject independent claim 11. Therefore, Syeda-Mahmood and Green, alone or in any permissible combination,

fail to teach or suggest a method for searching a document comprising receiving a query that designates at least (A) a phrase to be matched in a phrase matching process and (B) a selective designation of at least a tag or annotation that is to be ignored during the phrase matching process or a method of creating query-independent indices suitable for use in searching a document comprising labeling elements in the document with intervals wherein for markup tags, the intervals are defined in terms of a starting index number associated with an opening markup tag and an ending index number associated with a closing markup tag that corresponds to the opening markup tag and for single words, the intervals are defined in terms of a single index number associated with the word, as positively recited by Applicants' independent claims 1 and 11, respectively and similarly in independent claims 13, 16, 17 and 20. Therefore, the Applicants respectfully request the rejection be withdrawn.

Moreover, dependent claims 2-10, 12, 14, 15, 18 and 19 depend, either directly or indirectly, from independent claims 1, 11, 13 and 17, respectively, and recite additional limitations. As such, and for the exact same reason set forth above, the Applicants submit that claims 2-10, 12, 14, 15, 18 and 19 are also patentable over Syeda-Mahmood and Green. As such, the Applicants respectfully request the rejection be withdrawn.

## CONCLUSION

Thus, the Applicants submit that all of these claims now fully satisfy the requirements of 35 U.S.C. § 103. Consequently, the Applicants believe that all these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring the maintenance of the present final action in any of the claims now pending in the application, it is requested that the Examiner telephone Mr. Kin-Wah Tong, Esq. at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

PATENT
Atty. Dkt. No. 2002-0447

Respectfully Submitted,

March 14, 2007

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